

AMENDMENTS TO THE CLAIMS

Please amend claim 1 and add new claims 2-21. A listing of all present claims and amendments is provided below in compliance with revised 37 CFR 1.121.

1. (CURRENTLY AMENDED) A control apparatus for a fuel cell vehicle including a drive motor ~~that can drive for driving~~ the vehicle; a fuel cell that is supplied a reacting gas that undergoes an electrochemical reaction to generate electricity; a capacitor that is charged by a generated power of said fuel cell and a regeneration power of said drive motor; a reacting gas supply means that supplies said reacting gas to said fuel cell; and an output control means that controls an output current and an output voltage of said fuel cell, comprising:

a capacitor temperature detecting means that detects a temperature of said capacitor;

a maximum power setting means that sets a capacitor maximum power, which is a maximum value of the power for charging and discharging said capacitor, depending on the temperature of said capacitor;

a motor power limiting value calculating means that calculates a motor power limiting value for a drive and a regenerating motor power of said drive motor based on each of detected values of an output power of said fuel cell and a load power supplied to a load, excluding said drive motor, and said capacitor maximum power;

a motor real power detecting means that detects a real power of the drive motor, which is the motor power actually supplied during drive and regeneration of said drive motor; and

a motor power control means that controls said real power of said motor such that a detected value of the real power of said motor is equal to or less than said motor power limiting value.

2. (NEW) The control apparatus of claim 1, further comprising a capacitor voltage sensor for detecting the output voltage of the capacitor.

3. (NEW) The control apparatus of claim 1, further comprising a fuel cell voltage sensor for detecting a voltage across the fuel cell.

4. (NEW) The control apparatus of claim 1, further comprising an output current sensor for detecting an output current of the fuel cell.
5. (NEW) The control apparatus of claim 1, further comprising a fuel cell output voltage sensor for detecting an output voltage of the fuel cell.
6. (NEW) The control apparatus of claim 1, further comprising a drive motor current sensor for detecting a current that powers the motor power control means.
7. (NEW) The control apparatus of claim 1, further comprising an auxiliary device drive current sensor that detects a current that powers the load.
8. (NEW) The control apparatus of claim 1, further comprising:
 - an accelerator sensor for detecting an acceleration of the fuel cell vehicle;
 - a velocity sensor for detecting a velocity of the fuel cell vehicle; and
 - an IG switch that indicates a start of the operation of the fuel cell vehicle.
9. (NEW) The control apparatus of claim 1, wherein the motor power control means is connected in parallel to the capacitor.
10. (NEW) A control apparatus for a fuel cell vehicle, comprising:
 - a capacitor temperature sensor for detecting a temperature of a capacitor in the fuel cell vehicle;
 - a maximum power setting module for setting a maximum power value of the capacitor, wherein the maximum power value is a maximum value of the power for charging and discharging said capacitor, depending on the temperature of said capacitor;
 - a motor power limiting value calculating module for calculating a motor power limiting value for a drive motor of the fuel cell vehicle, which corresponds to the maximum power of the capacitor and a regenerating motor power of the drive motor, which is based on one or more detected values indicative of the state of the capacitor;

a motor real power detecting module for detecting a motor real power of the drive motor, wherein the motor real power is motor power actually supplied during drive and regeneration of said drive motor; and

a motor power control module for controlling said motor real power of said drive motor such that a detected value of the motor real power is equal to or less than said motor power limiting value.

11. (NEW) The control apparatus of claim 10, wherein the motor power limiting value calculating module calculates the motor power limiting value based on an output power of the fuel cell and a load power supplied to an electrical load, excluding the drive motor and the capacitor maximum power.

12. (NEW) The control apparatus of claim 10, wherein the motor power limiting value calculating module calculates the regenerating motor power of the drive motor based on the temperature and total voltage of the capacitor.

13. (NEW) The control apparatus of claim 10, further comprising a control apparatus for outputting to the motor power control module a control command directing the real power of the motor to be made equal to the motor power limiting value when the real power of the motor is larger than the motor power limiting value.

14. (NEW) A method of controlling a fuel cell, comprising the steps of:

calculating a capacitor maximum power value of a capacitor that is charged by power from the fuel cell;

calculating a motor power limit value for a motor based on an output power of the fuel cell and said capacitor maximum power value;

calculating a real power value of the motor corresponding to an actual amount of power that drives the motor;

comparing the real power value to the motor power limit value; and

adjusting the real power value if the real power value is larger than the motor power limit value.

15. (NEW) The method of claim 14, wherein the step of adjusting the real power value comprises reducing the real power value to an amount that is equal to or less than said motor power limit value.

16. (NEW) The method of claim 14, wherein the capacitor maximum power depends on a temperature of the capacitor.

17. (NEW) The method of claim 14, wherein the step of adjusting comprises outputting a control command to a motor power control module for directing the real power of the motor to be made equal to the motor power limit value.

18. (NEW) A method of controlling a fuel cell vehicle including a drive motor for driving the vehicle, a fuel cell that generates electricity from a reacting gas that undergoes an electrochemical reaction, and a capacitor that is charged by at least one of power from said fuel cell and a regeneration power of said drive motor, the method comprising the steps of:

generating power with the fuel cell; and

controlling an amount of real power applied to the drive motor based on an amount of the power generated by the fuel cell and a capacitor maximum power value, wherein the capacitor maximum power value is a maximum value of the power for charging and discharging said capacitor.

19. (NEW) The method of claim 18, further comprising the step of setting the capacitor maximum power value based on a temperature of the capacitor.

20. (NEW) The method of claim 18, further comprising the step of calculating a motor power limit value based on the capacitor maximum power value.

21. (NEW) The method of claim 20, wherein the step of controlling comprises controlling the amount of real power applied to the drive motor, such that a detected value of the real power is equal to or less than said motor power limit value.